NON-SCIENTIFIC ABSTRACT

We are proposing a new therapeutic approach to human prostate cancer. While localized prostate malignancies are curable by surgery or radiation therapy, metastatic prostate cancer, while responsive to hormonal radiation and chemotherapy, is not cured by these modalities. Lymphocytes can kill tumor cells and require cytokines such as interleukin (IL)-2 for their function. Cytokine genes can be introduced into tumor cells to generate specific host-antitumor killer cells. We have shown that we can introduce cytokine genes into cancer cells. In mouse models these cytokines released by tumor cells can indeed generate a potent lymphocyte response capable of destroying established cancer. In animal studies IL-2, granulocyte-macrophage colony-stimulating factor (GM-CSF) and gamma interferon (IFN-γ) were especially efficacious in inducing cellular antitumor responses and the results of these studies formed the basis for receiving approval from the FDA and the RAC for two gene therapy protocols now underway at MSKCC. These human studies use IL-2 gene-transduced allogeneic cell vaccines for melanoma and renal cell carcinoma patients. The protocols opened in March 1993 and 23 patients have been enrolled. For this proposal in human prostate carcinoma we plan to use a strategy that involves the use of vectors containing two cytokine genes simultaneously. The cytokine genes chosen are IL-2 and IFN-γ.